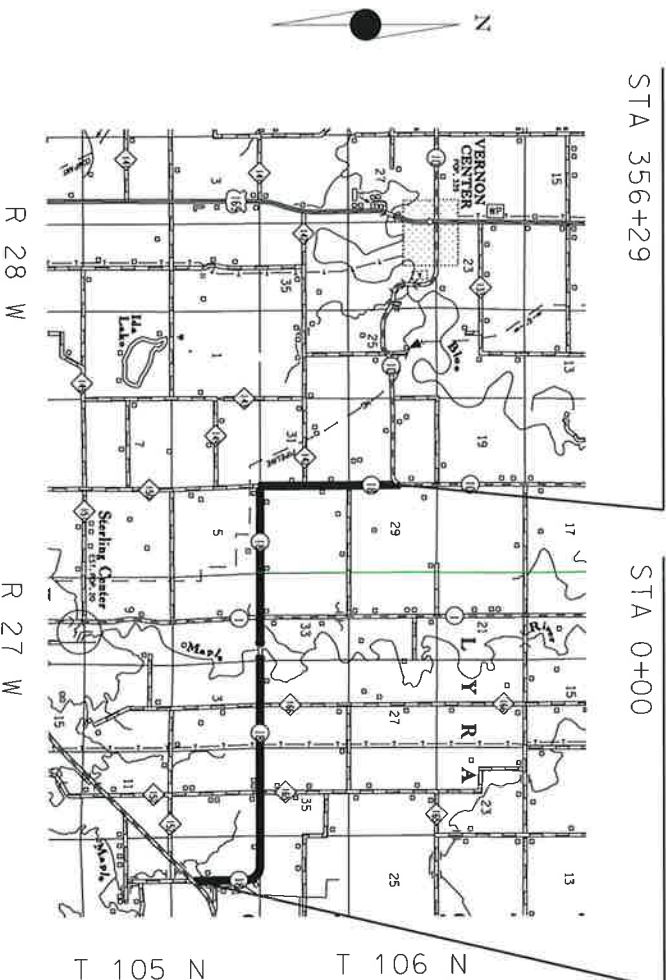


# BLUE EARTH COUNTY HIGHWAY DEPARTMENT

END S.A.P. 07-618-09  
STA 356+29

BEGIN S.A.P. 07-618-09  
STA 0+00



CONSTRUCTION PLAN FOR BITUMINOUS  
OVERLAY & AGGR. SHOULDER

COUNTY STATE AID HIGHWAY NO. 18

BETWEEN: T.H. 30 AND CSAH 10  
FROM: A PT. 2760' E. & 1482' N. OF THE SW  
COR. OF SEC. 1-105-27  
TO: A PT. 200' N. & 120' W. OF THE E 1/4 COR.  
OF SEC. 30-106-27

GROSS LENGTH 35637.00 FEET 6.749 MILES  
NET LENGTH 35637.00 FEET 6.749 MILES

GRADED IN: 1965 UNDER SAP 07-618-05  
SURFACED IN: 1980 UNDER SAP 07-618-06  
SURFACED IN: 1981 UNDER SAP 07-618-07  
OVERLAYED IN: 1992 UNDER SAP 07-618-08

## DESIGN DESIGNATION

ADT (Current Year) 576 (2014)  
ADT (Future Year) 865 (2034)  
ADT (Heavy Commercial)  
ESAL 159,000  
7 TON DESIGN  
DESIGN SPEED 50 MPH  
DESIGN SPEED NOT ACHIEVED AT:  
R-VALUE 10  
SHOULDER WIDTH 4'  
STOPPING SIGHT DISTANCE BASED ON  
3.5' HEIGHT OF EYE  
0.5' HEIGHT OF OBJECT

## GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT  
OF TRANSPORTATION'S "STANDARD SPECIFICATIONS  
FOR CONSTRUCTION" SHALL GOVERN.

PLAN NOT TO SCALE

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE  
COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED  
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

*Alan Forsberg*  
COUNTY ENGINEER ALAN FORSBERG

DATE *4/11/14* LIC. NO. 14720

DISTRICT STATE AID ENGINEER REVIEWED FOR  
COMPLIANCE WITH STATE-AID RULES/POLICY  
*John P. [Signature]* DATE *4/12/14*

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING  
*John P. [Signature]* DATE *4/12/14*

S.A.P. 07-618-09 SHEET NO. 1 OF 7 SHEETS

# ESTIMATED QUANTITY

ITEM NO.	ITEM	UNIT	CSAH # 18	NON PART.	TOTAL
(1)	2118.501 AGGREGATE SURFACING, CL-2 (M)	TON	158	0	158
(1)	2221.501 AGGREGATE SHOULDERING, CL-1 (M)	TON	3586	0	3586
	2232.501 MILL BITUMINOUS SURFACE	SQ YD	1300	0	1300
(1)	2360.501 TYPE SP 19.0 WEARING COURSE MIX (2.B)	TON	8270	0	8270
(2)	2580.501 TEMPORARY LANE MARKING	LIN FT	2850	0	2850

(1) BASIS OF PAYMENT SPECIFIED IN SPEC. 1903 SHALL BE MODIFIED TO PRECLUDE ANY PRICE ADJUSTMENT FOR INCREASED OR DECREASED QUANTITIES.  
 (2) PLACED ON EVERY LIFT, REMOVED BEFORE NEXT LIFT AND PRIOR TO STRIPING.

CERT. BY Alan Forberg LIC. NO. 14720 MAR. 10, 2014 S.A.P. 07-618-09 SHEET NO. 2 OF 7 SHEETS  
 PROFESSIONAL ENGINEER

## BASIS FOR PLANNED QUANTITIES

AGGREGATE SHOULDERING, & SURFACING  
COMPACTED DRY DENSITY - 140 LBS. PER CU. FT.

### BITUMINOUS SURFACE

BITUM. MAT'L FOR TACK COAT WILL BE INCIDENTAL.

BITUM. MAT'L FOR WEAR COURSE AC (PG 58-28) 5.8% BY WEIGHT

BITUM. COURSES, 110 LBS. PER 1" / SQ. YD.

THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

STANDARD PLATES	
PLATE NO.	DESCRIPTION
80001	STANDARD BARRICADES

CERT. BY

*Alan Forberg*  
PROFESSIONAL ENGINEER

LIC. NO. 14720 MAR. 10, 2014

S.A.P. 07-618-09

SHEET NO. 3 OF 7 SHEETS

**SHLD. & SURF. QUANTITIES**  
**ROAD # CSAH 18**  
**PROJECT # S.A.P. 07-618-09**

LOCATION	LENGTH FEET	AVER WIDTH FEET	DEPTH INCHES	AGGR. SHLD. TON	AGGR. SURF. TON
<b>SHOULDER CL-1M</b>					
STA 0 + 0 TO STA 173 + 99 RT	17399	4	2	810	
STA 175 + 31 TO STA 194 + 56 RT	1925	4	2	90	
STA 195 + 59 TO STA 356 + 29 RT	16070	4	2	750	
STA 0 + 0 TO STA 31 + 0 LT	3100	4	2	140	
STA 31 + 0 TO STA 44 + 88 LT	1388	2	2	30	
STA 44 + 88 TO STA 173 + 99 LT	12911	4	2	600	
STA 175 + 31 TO STA 194 + 56 LT	1925	4	2	90	
STA 195 + 59 TO STA 356 + 29 LT	16070	4	2	750	
MATERIAL FOR FIELD ENTRANCES				326	
<b>AGGR. SURFACING CL-2 (M)</b>					
14 DRIVEWAYS @	7 TONS				98
4 INTERSECTIONS @	15 TONS				60
<b>TOTAL</b>				<b>3586</b>	<b>158</b>

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**SHOULDERING & SURFACING QUANTITIES**

CERTIFIED BY

*Alan Forsberg*

LIC. NO. 14720

MAR. 10, 2014

S.A.P. 07-618-09 SHEET 4 OF 7 SHEETS

# CSAH 18 SUPERPAVE BITUM. CALCULATIONS

LOCATION		LENGTH FEET	AVER WIDTH FEET	DEPTH INCHES	WEAR TON
<b>BITUM. WEAR</b>					
STA	0 + 0 TO STA	31 + 0	24	1.5	682
BOT. OF CURVE STA	31 + 0 TO STA	44 + 88	26	1.5	331
STA	44 + 88 TO STA	12911	24	1.5	2840
BRIDGE STA	173 + 99 TO STA	132	28	1.5	34
STA	175 + 31 TO STA	1925	24	1.5	424
STA	195 + 59 TO STA	16070	24	1.5	3535
5 INTERSECTIONS @	30 TONS				150
14 DRIVEWAYS @	15 TONS				210
10 MAILBOX PADS @	175 LENGTH	1750	4	1.5	64
<b>TOTAL</b>					<b>8270</b>

P:\BITUM\14bitum\CSAH 18\18 MILL.XSLA

## MILL BITUM. SURFACE

STATION TO STATION	LOC.	LENGTH	WIDTH	SQ.YD.
0 + 0 TO 1 + 0		100	24	267
172 + 99 TO 176 + 31		332	28	1,033
<b>TOTAL</b>				<b>1,300</b>

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TAPER FROM BEGINNING STATION AT 1.5" OUT 100' TO 0".  
START 100' FROM END OF BRIDGE AT 0" AND TAPER TO THE  
END OF BRIDGE TO 1.5". CARRY 1.5" ACROSS THE BRIDGE AND  
TAPER OUT 100' FROM END OF BRIDGE BACK TO 0".  
THE MILLINGS SHALL BE HAULED TO PRANGE PIT, SEE  
SPECIAL PROVISIONS.

## SUPERPAVE & MILLING QUANTITIES

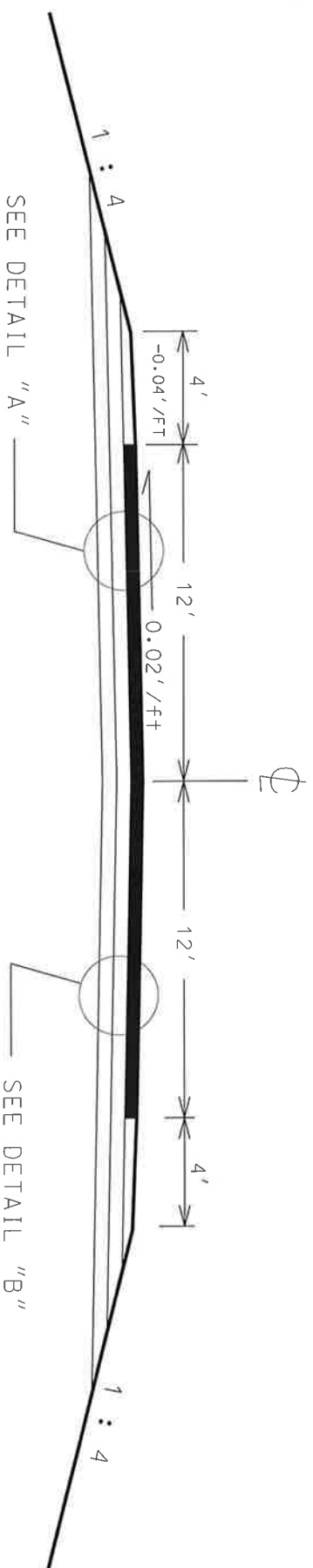
CERTIFIED BY

*Alan Forsberg*

LIC. NO. 14720 MAR. 10, 2014

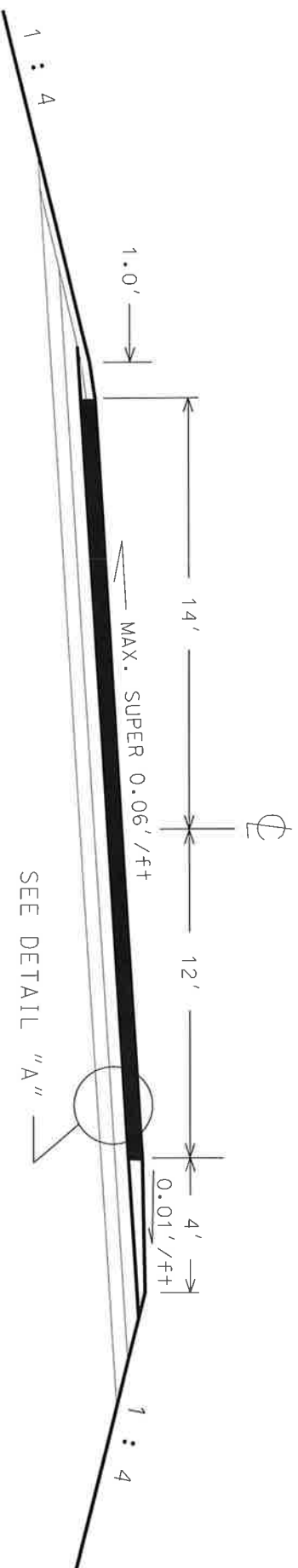
S.A.P. 07-618-09 SHEET No. 5 OF 7 SHEETS

# TYPICAL SECTION

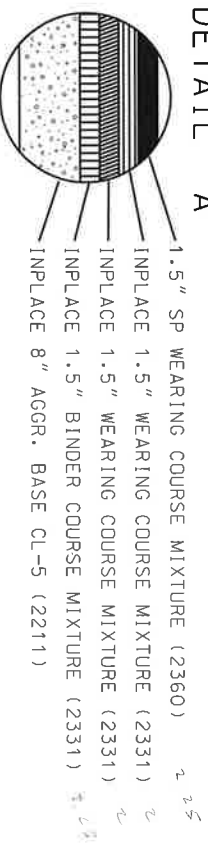


# TYPICAL CURVE SECTION

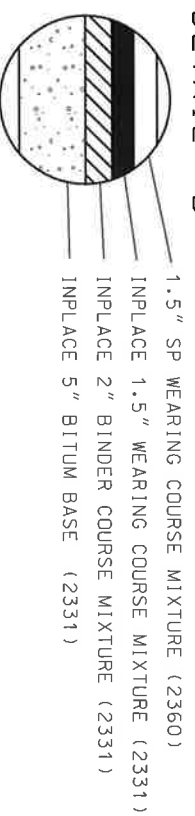
STA 31+00 TO STA 44+88 LT



## DETAIL "A"

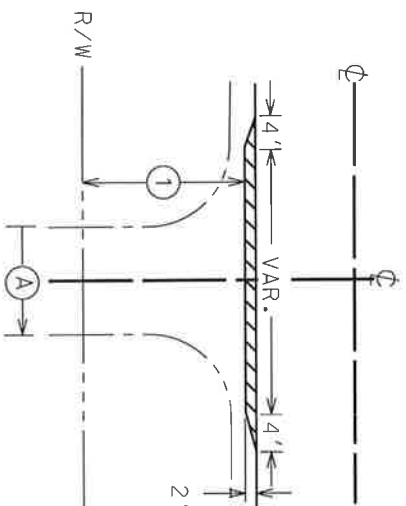


## DETAIL "B"



# BITUMINOUS APPROACHES AND ENTRANCES DETAIL

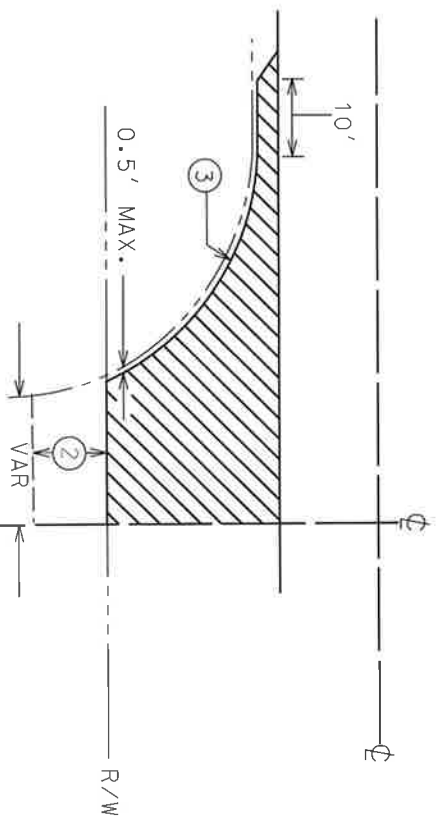
## FIELD ENTRANCE



- (A) 20' FOR SINGLE F.E.  
28' FOR DOUBLE F.E.

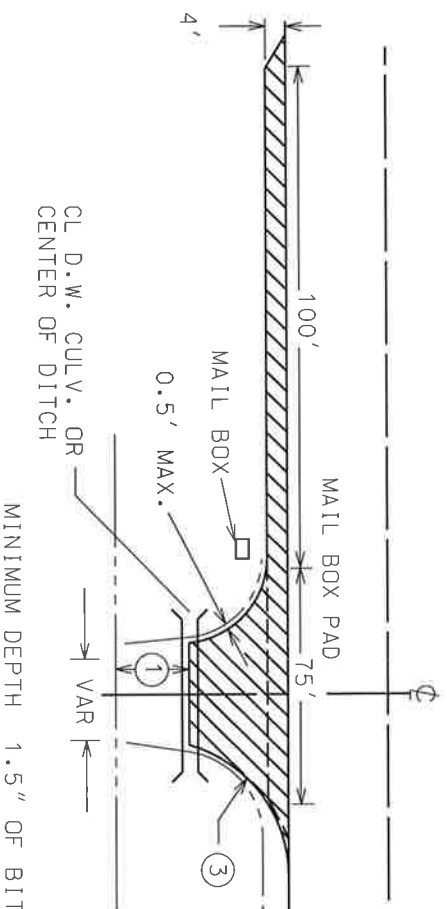
MINIMUM DEPTH 1.5" OF BIT

## ROAD APPROACH



MINIMUM DEPTH 1.5" OF BIT

## FARM & OTHER ENTRANCES



- (1) FINISH WITH AGGR. MATERIAL FROM  
EDGE OF BITUM. TO A MIN. OF 10'.
- (2) FINISH WITH AGGR. MATERIAL, MIN. OF 10'.
- (3) BITUM. RADIUS TO BE STAKED IN  
FIELD BY THE ENGINEER - 25' MIN.  
(FOR FARM D.W. CONSIDER 30' TO 40' MAX.)

CONTRACTOR WILL BE REQUIRED TO SHAPE & NOTCH  
ALL DRIVEWAYS, INTERSECTIONS & MAIL BOX PADS  
THAT ARE NOT ALREADY PAVED AS DIRECTED BY THE  
ENGINEER. WORK SHALL BE DONE INCIDENTAL TO THE  
WEAR.

CONTRACTOR WILL BE REQUIRED TO HAND FINISH  
SHOULDERS ON ALL APPROACHES AND ENTRANCES  
AS DIRECTED BY THE ENGINEER.